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THE FAMILY COMPOSITAE IN ASSAM AND NORTH EAST FRONTIER AGENCY

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ABSTRACT

The paper presents the distribution and relative abundance of 167 taxa belonging to 47 genera of the Compositae in Assam and North East Frontier Agency. The family is best represented in the tropical evergreen and semi-evergreen and again, in subtropical pine and mixed forests; it is much less abundant in temperate altitudes, very rarely extending up to sub-alpine zone in NEFA. Of the species enumerated, the number of species found common to other countries are indicated against each: Burma (45), Malaya (16), Java (25), China (25), Japan (24), Ceylon (21), Philippines (7), Africa (17), Australia (5), Europe (5) and America (5).

Ambrosia artemisiifolia Linn., *Eupatorium trapezoideum* Kunth, *Erigeron annuus* Pers. and *Petasites albus* Gaertn. appear to be new records of species for India. On the other hand, these species viz. *Ainsliaea angustifolia* Hook. f. & Thom., *Brachycome assamica* Clarke, *Cnicus griffithii* Hook. f., *Inula kalapani* Clarke etc. appear to be endemic to Assam and NEFA.

INTRODUCTION

After the publication of the *Flora of British India* Vol. 3 by J. D. Hooker (1881), Kanjilal, Das *et. al.* (1939) have published the *Flora of Assam* Vol. 3, in which they have recorded only 27 genera and 84 species of the family Compositae. Collections made by Burkill (1924-25) in the Abor Hills, by Bor in the Aka Hills, Fischer (1938) in the Lushai Hills and Srinivasan (1959) in between Foot Hills and Bomdila, do not list many species. To help our knowledge of the family, a large number of exploration collection tours were undertaken by the Eastern Circle of the Botanical Survey of India, Shillong, in the different parts of Assam and NEFA during the years 1956-61.

In continuation of our earlier publication on the family Rubiacea (see Kar & Panigrahi, 1963), this paper presents the distribution and relative abundance of the family Compositae in different forest types and altitudinal ranges and appends an enumeration of 59 genera and 167 species, with all available field data. This enumeration also includes the species collected earlier by Mann, Kanjilal, Das, De, Bor, Deka, Sharma and others, between 1913 and 1956, but which were not described or listed in the *Flora of Assam* 1939. This would show that 136 species not described in the Flora of Assam are now available in the Eastern Regional Herbarium of the Botanical Survey of India, Shillong.

The family Compositae comprising about 1000 genera and 20,000 species in the world flora, is represented by 128 genera and 605 species in the Flora of British India, 1881. Of these, it appears that 4 genera and 49 species are non-Indian, and 47 genera and 289 species, non-Eastern-Indian in distribution.

An analysis of the distributional data of the 167 species enumerated brings out the following important features: The family Compositae is best represented in the tropical evergreen and semi-evergreen and sub-tropical pine and mixed forests; it is much less abundant in temperate altitudes, very rarely extending up to sub-alpine zone and most poorly represented in the tropical and sub-tropical grasslands and tropical moist and dry deciduous forests.

8 species appear to be endemic to Assam and NEFA. This indicates a very low percentage of about 4.8% endemism in the Compositae flora of this region. The exact localities of their occurrence are shown against each of them.

Name of species	*Localities in which they are endemic*
Ainsliaea angustifolia Hook. f. & Thom.	Khasi and Jaintia Hills-Shillong Peak, Pangtung; Kameng F.D.-Sissini.
Brachycome assamica Clarke	Cachar-Barak R. F., Jiri river bank.
Cnicus griffithii Hook. f.	Tirap F.D., Pangsupass.
Inula kalapani Clarke	Khasi and Jaintia Hills-Kynshi.
Prenanthes khasiana Clarke	Khasi and Jaintia Hills-Sohrarim, Laylingdoh, Kameng F.D.-Bompula Camp.
Senecio griffithii Hook. f. & Thom.	Khasi and Jaintia Hills-Jorain & Pynursla.
S. linifolius Clarke	Khasi and Jaintia Hills-Shillong, Cherrapunji and Markasa.
S. macranthus Clarke	Khasi and Jaintia Hills-Kynshi.

The following 4 species appear as new records for India:

Ambrosia artemisiifolia Linn.
Eupatorium trapezoideum Kunth.
Erigeron annuus Pers.
Petasit[illegible]

The following 6 species are new records for Assam:

Blumeopsis falcata (Don) Merr.
Conyza viscidula Wall. ex DC.
Cotula anthemoides Linn.
Erigeron annuus Pers.
E. bellidioides Benth.
E. canadensis Linn.
Senecio wattii Smith, not recorded in any regional floras and in other available records, has also been collected from NEFA.

ENUMERATION

Achillea millefolium Linn.

Khasi and Jaintia Hills: Shillong, *De* 16783. Cultivated.

A. squarrosa Ait.

Khasi and Jaintia Hills: Garampani, *Panigrahi* 4207; Nongkrem, *Srinivasan* 22366; Shillong, *Dhar* 20681. Scarce. Ornamental.

Adenostemma lavenia (Linn.) Kuntze

Khasi and Jaintia Hills: Umtru, *Panigrahi* 4407; Pangtung, *Deka* 15348; Peak Forest, *Deka* 16219; Mawryŋghkneng, *Saikia* 23281; Cherrapunji, *Deka* 19398; Jowai, *Kanjilal* 8508; Lakhimpur: Ranga Reserve Forest, *Panigrahi* 11462; Darrang: Tezpur, *Panigrahi* 11567; Subansiri F.D.: Petepool, *Panigrahi* 19755; Siang F.D.: Tuting, *Rolla* 17340; Galing, *Rolla* 17497; Lohit F.D.: Sonegodam, *Rolla* 10368; Dreyi, *Rolla* 10427; Tirap F.D.: Kheti, *Panigrahi* 14611; Raho, *Panigrahi* 16857; Chenglang, *Rolla* 20256; Kameng F.D.: Aka Hills, *Bor* 17416. Very common.

A. viscosum Forst. var. **elatum** Hook. f.

Subansiri F.D.: Yacholi, *Panigrahi* 19755.

Ageratum conyzoides Linn.

Khasi and Jaintia Hills: Shillong, *Srinivasan* 23400; Mawmluh, *Nath* 2693; Upper Shillong, *Panigrahi* 4727; Nongkhlaw, *Panigrahi* 16234; Sola Reserve Forest, *Dutta* 15053; Sibsagar: Kaziranga, *Rolla* 9837; Darrang: Tangla, *Nath* 13396; Dharikati, *Panigrahi* 5646; Burigong, *Panigrahi* 11201; Cachar: Katakhal, *Rolla* 9083; Goalpara: Sarbhanga River Bank, *Rolla* 7183; Kachugaon, *Deka* 17912; Charaidaka, *Purkayastha* 13382; Subansiri F.D.: Ziro, *Panigrahi* 19892A; Siang F.D.: Tuting, *Rolla* 17345; Koppu, *Rolla* 17448; Tirap F.D.: Chenglang, *Panigrahi* 14408; Namchik, *Rolla* 20174; Lohit F.D.: Paya, *Rolla* 10684. Very common.

Ainsliaea angustifolia Hook. f.

Khasi and Jaintia Hills: Shillong Peak, *Deka* 22974; Cherrapunji, *Panigrahi* 4798; Upper Shillong, 3394; Pangtung, *Deka* 16529; Kameng F.D.: Sissini, *Rolla* 1251. Common.

A. aptera DC.

Khasi and Jaintia Hills: Cherrapunji, *Panigrahi* 3672; Smith, *Das* 9732. Common.

A. pteropoda DC.

Khasi and Jaintia Hills: Shillong, *Deka* 21777; Smith, *Deka* 9731; Sadow forest, *Sharma* 8907; Cherrapunji, *Panigrahi* 3671; Pynursla, *Panigrahi* 4590; Mawmluh, *Panigrahi* 4905; Upper Shillong, *Panigrahi* 3363; Kameng F.D.: Jabrang, *Rolla* 1281; Bompu, *Panigrahi* 6184; Bomdila, *Panigrahi* 6891; Kalaktang, *Panigrahi* 15837; Subansiri F.D.: Hapoli, *Panigrahi* 19832; Tirap F.D.: Raho, *Panigrahi* 16817. Common.

Ambrosia artemisiifolia Linn.

Khasi and Jaintia Hills: Cherra Road, *Deka* 17164; Upper Shillong, *Panigrahi* 3384; Shillong, *Kar* 21417; Chandmari, *Syam* 22966; Upper Shillong, *Sharma* 15752. Probably introduced, now naturalised in Shillong.

Anaphalis adnata DC.

Khasi and Jaintia Hills: Peak Forest, *De* 18814; Cherrapunji, *Deka* 16194; without locality, *Gustav Mann* 634; Langkyrdem, *Panigrahi* 3113; Jowai, *Panigrahi* 4058; Nongpoh, *Naik* 19252; Shillong, *Panigrahi* 21404; Subansiri F.D.: Yacholi, *Panigrahi* 19729; Kameng F.D.: Rahang, *Rolla* 1497. Common.

A. araneosa DC.

Khasi and Jaintia Hills: Peak Forest, *De* 18813; Shillong, Deka 23383; without locality, *Gustav Mann* 632; Kameng F.D.: Rupa, *Panigrahi* 6913; Wang Basti, *Panigrahi* 6933; Bomdila, *Rolla* 1354; Sissini, *Rolla* 1239; Subansiri F.D.: Hapoli, *Panigrahi* 19703. Common.

A. cinnamomea Clarke

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3299; Upper Shillong, *Panigrahi* 3385; Kameng F.D.: Rupa (1570 m), *Rolla* 1291; Bomdila (1829 m), *Rolla* 7286. Common.

A. contorta Hook. f.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 21407; *Kanjilal* 2855; Upper Shillong, *Panigrahi* 3742; Laitlyngkot, *Panigrahi* 3114; Nongkhlaw, *Panigrahi* 16195; Cherrapunji, *Deka* 22016; without locality, *Gustav Mann* 633; Naga Hills: without locality, *Bor* 15799; Kameng F.D.: Sissini, *Rolla* 1270; Jegaon (1829 m), *Panigrahi* 15953; Senge Dzong (4550 m), *Rolla* 7727; Rupa (1570 m), *Panigrahi* 6708; Aka Hills, *Bor* 18909; Subansiri F.D.: Ziro (1525 m), *Panigrahi* 19790; Siang F.D.: Minguing (1266 m), *Rolla* 17715; Kepangla

(1524 m), *Rolla* 17528; Lohit F.D.: Dreyi (1200 m), *Rolla* 10511. Common.

Anaphalis griffithii Hook. f.

Khasi and Jaintia Hills: Jowai, *Deka* 5192; Sohraraim, *De* 17625; Dumpep, *De* 19839; Chandmari, *Syam* 22964. Common.

A. nubigena DC.

Kameng F.D.: Sela (4181 m), *Rolla* 1610. Scarce.

A. rovleana DC.

Kameng F.D.: Sela (4000-4500 m). *Rolla* 1601. Abundant.

Anthemis nobilis Linn.

Khasi and Jaintia Hills: Upper Shillong, *Deka s.n.* Cultivated.

Artemisia maritima Linn.

Khasi and Jaintia Hills: Shillong, *Deka* 11013. Cultivated.

A. nilagirica (Clarke) Pamp.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3283; Jowai, *Panigrahi* 4036; Kameng F.D.: Baha (1200 m), *Panigrahi* 15402; Thengri (1800 m), *Panigrahi* 6587; Rupa, *Rolla* 1325; Subansiri F.D.: Ziro (1525 m), *Panigrahi* 19748; Siang F.D.: Minguing (1266 m), *Rolla* 17721; Tirap F.D.: Tinchha (1916 m), *Panigrahi* 14655; Lohit F.D.: Dreyi (1200 m), *Rolla* 10377; Douliang (1850 m), *Rolla* 10793. Common.

A. parviflora Buch.-Ham. ex Roxb.

Khasi and Jaintia Hills: Jowai, *Deka* 17110; Kameng F.D.: Rahung, *Rolla* 1496; Bomdila, *Rolla* 1399. Common.

Aster molliusculus Wall. ex Clarke

Khasi and Jaintia Hills: Jowai Road, *Deka* 17233. Scarce.

A. sikkimensis Hook. f.

Kameng F.D.: Rupa (1570 m), *Rolla* 1300. Scarce.

A. thomsoni Clarke

Kameng F.D.: Bomdila, *Rolla* 1396. Common.

A. tibeticus Hook. f.

Kameng F.D.: Senge Dzong, *Rolla* 1561. Scarce.

A. trinervius Roxb.

Khasi and Jaintia Hills: without locality, *Gustav Mann* 608; Lohit F.D.: Douliang (1850 m), *Rolla* 10766. Common.

Bidens biternata (Lour.) Merr. & Sherff.

Khasi and Jaintia Hills: Nongpoh, *Sharma* 16815; Mawryngkneng, *Panigrahi* 4021; Jowai, *Panigrahi* 4046; Darrang: Potashali, *Panigrahi* 5571; Naga Hills: Kohima, D.F.O. (without field no.); Kameng F.D.: Rupa, *Rolla* 1349; Bhairabkund, *Panigrahi* 15140; Sissini, *Panigrahi* 6056; Subansiri F.D.: Kimin, *Panigrahi* 19447; Tirap F.D.: Chenglang, *Murthy* 12928; Siang F.D.: Tuting, *Murthy* 13071. Very common.

B. tripartita Linn.

Subansiri F.D.: Ziro, *Rolla* 1654. Scarce.

Blumea balsamifera (Linn.) DC.

Khasi and Jaintia Hills: Jowai, *Deka* 5092; Siang F.D.: Pakam, *Murthy* 13040. Common.

B. riparia (Bl.) DC.

Khasi and Jaintia Hills: Jorain, *Deka* 5050; Kameng F.D.: Peri-la, *Panigrahi* 7017; Tirap F.D.: Khela, *Murthy* 12988. Abundant.

B. densiflora DC.

Khasi and Jaintia Hills: Barapani, *Deka* 3872; Siang F.D.: Tuting, *Rolla* 17310; Lohit F.D.: Sonegodam (850 m), *Rolla* 10398. Common.

B. fistulosa (Roxb.) Kurz

Darrang: Nunai, *Nath* 13317; Goalpara: Sarbhanga river bank, *Rolla* 7160; Kameng F.D.: Kaleng, *Panigrahi* 5952. Common.

B. hieracifolia DC.

Khasi and Jaintia Hills: Raliang, *Rolla* 2653; Garampani, *Rolla* 2589. Common.

B. hieracifolia (D. Don) DC. var. **macrostachya** (DC.) Hook. f.

Khasi and Jaintia Hills: Umsaw, *Sharma* 16288; Sibsagar: Mohmara, *Kanjilal* 4347. Common.

B. lacera (Burm. f.) DC.

Khasi and Jaintia Hills: Nongkhlaw, *Panigrahi* 16250; Darrang: Nunai, *Nath* 13332; Kameng F.D.: Kaleng, *Panigrahi* 5949A. Common.

B. laciniata (Roxb.) DC.

Khasi and Jaintia Hills: Garampani, *Deka* 5150; Kameng F.D.: Kaleng gate, *Panigrahi* 5949; Lohit F.D.: Chenglang (600 m), *Murthy* 12925. Common.

B. mollis (Don) Merrill

Khasi and Jaintia Hills: Barapani, *Panigrahi* 3892. Scarce.

B. lanceolaria (Roxb.) Druce

Kameng F.D.: Foot hills camp (267 m), *Panigrahi* 5837; Sissini, *Panigrahi* 5972; Kaleng, *Panigrahi* 5951. Common.

B. procera DC.

Khasi and Jaintia Hills: Cherrapunji, *Panigrahi* 4958; Jowai, *Deka* 5267; Dawki, *Panigrahi* 4626; Lohit F.D.: Dreyi (1200 m), *Rolla* 10500; Shoeliang, *Rolla* 10887; Badaru (400 m), *Rolla* 10894. Common.

Blumeopsis falcata (Don) Merr.

Khasi and Jaintia Hills: Myrdon forest, *Sharma* 16286; Nartiang, *Deka* 17234; Goalpara: (without locality). *Fisher s.n.*...*Gustav Mann* 101. Mawryngkneng, *Panigrahi* 5234; Umsaw, *Panigrahi* 9155; Kameng F.D.: Rupa, *Rolla* 1337.

Brachycome assamica Clarke

Cachar: Barak R.F., *Kanjilal* 4732; Jiri river bank, *De* 20535. Scarce.

Carpesium abrotanoides Linn.

Tirap F.D.: Niusa (1400 m), *Panigrahi* 15029. Scarce.

C. cernuum Linn. var. **cernuum**

Assam: without locality, *Gustav Mann* 392. Scarce.

C. cernuum Linn. var. **lanatum** Hook. f.

Khasi and Jaintia Hills: Peak Forest, *Deka* 18810; *Sharma* 15845. Common.

C. cernuum Linn. var. **pedunculosa** Clarke

Kameng F.D.: Aka Hills, *Bor* 20063. Scarce.

Centipeda orbicularis Lour.

Darrang: Dalgaon, *Panigrahi* 14395.

Chrysanthemum coronarium Linn.

Khasi and Jaintia Hills: Shillong, *Deka* 21610. Cultivated.

C. coronipifolium Vill.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3901.

Cichorium endivia Linn.

Khasi and Jaintia Hills: Shillong, *Deka* 21636. Cultivated.

Cnicus argyracanthus DC.

Kameng F.D.: Jegaon (2000 m), *Panigrahi* 6714; Nyukmadong (2633 m), *Rolla* 7604; Brukpalanchen, *Panigrahi* 15669A; Seargaon, *Panigrahi* 15772. Common.

C. arvensis Hoffm.

Nowgong: Silghat, *Panigrahi* 5345. Common.

C. griffithii Hook. f.

Tirap F.D.: Pangsupass (1233 m), *Rolla* 20150; Kameng F.D.: without locality, *Rolla* 1321; without locality, *Rolla* 1637. Scarce.

C. involucratus DC.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3193; Subansiri F.D.: Petepool, *Panigrahi* 19767. Common.

C. sinensis Gard. et Champ.

Kameng F.D.: Rupa (1570 m), *Rolla* 1340. Scarce.

Conyza japonica Less.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3188; Raliang, *Rolla* 2658; Kameng F.D.: Sissini, *Panigrahi* 6085; Aka Hills, *Bor* 17389. Abundant.

C. stricta Willd.

Khasi and Jaintia Hills: Peak Forest, *De* 18812; without locality, *Gustav Mann* 204. Scarce.

C. viscidula Wall. ex DC.

Goalpara: Bamba Forest, *Dinanath* 13007; Nowgong: Langecholict, *Kanjilal* 4304; Lushai Hills: Aijal, *Deka* (without field no.). Common.

Cotula anthemoides Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3251; *Sharma* 16924. Common.

C. hemisphaerica Wall. ex Clarke

Darrang: Dharikati, *Panigrahi* 5650; Lohit F.D.: Saikhowaghat, *Deka* 17820; without locality, *Gustav Mann* 135. Common.

Crepis acaulis Hook. f.

Darrang: Nunai, *Nath* 13241; Lower Assam: without locality, *Gustav Mann* 61. Common.

C. fuscipappa Benth.

Khasi and Jaintia Hills: without locality, *Gustav Mann* 548; Upper Shillong, *Deka* 18323; Raliang, *Rolla* 2655; Darrang: Nunai, *Panigrahi* 13389; Kameng F.D.: Jegaon, *Panigrahi* 6665. Abundant.

C. japonica Benth.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3244; Barapani, *Deka* 18595; Nongpoh, *Rolla* 11054; Goalpara: Gangia, *D.F.O.* 13377; Darrang: Dharikati, *Panigrahi* 5698; Tangla, *Nath* 13440; Kameng F.D.: Brucpalanchen, *Panigrahi* 15621; Seargaon, *Panigrahi* 15765; Kalaktang, *Panigrahi* 15522; Aka Hills, *Bor* 18902; Siang F.D.: Tuting (600 m), *Murthy* 13063. Abundant.

C. silhetensis Hook. f.

Darrang-Gohpur R.F.: *Purkayastha* 13458; Goalpara: Kachugaon, *Deka* 16216; Holtugaon, *Dinanath* 13315; Kameng F.D.: Bhairabkund, *Panigrahi* 15108. Common.

Dahlia excelsa Benth.

Khasi and Jaintia Hills: Shillong, *Deka* 14067. Cultivated.

Dichrocephala chrysanthemifolia DC.

Khasi and Jaintia Hills: Serraraim, *Sharma* 22591. Scarce.

D. latifolia DC.

Khasi and Jaintia Hills: Mawmluh, *Deka* 2692; Shillong, *Deka* 18350; Nongkhlaw, *Panigrahi* 16181; Sibsagar: Naragaon, *Dutta* 15351; Kameng F.D.: Amartola, *Panigrahi* 15190; Aka Hills, *Bor* 17402; Subansiri F.D.: Ziro, *Rolla* 1650; Khuni Pahad, *Panigrahi* 19620; Siang F.D.: Geling, *Rolla* 17498; Kambong, *Murthy* 13040; Tirap F.D.: Chenglang, *Murthy* 12924; Lohit F.D.: Paya, *Rolla* 10874. Abundant.

Eclipta prostrata (Linn.) Linn.

Lakhimpur: Upper Dihing R.F., *Panigrahi* 18741; Sibsagar: Kaziranga, *Rolla* 9811; Darrang: Orang, *Panigrahi* 14321.

Elephantopus scaber Linn.

Khasi and Jaintia Hills: Umsaw, *Rolla* 9147; Lakhimpur: Digboi, *Panigrahi* 18956; Sibsagar: Kaziranga, *Rolla* 9867; Darrang: Dharikati, *Panigrahi* 5699. Common.

Emilia sonchifolia (Linn.) DC. var. **mucronata** Clarke

Khasi and Jaintia Hills: Cherrapunji, *Panigrahi* 3481; Shillong, *Panigrahi* 3317. Scarce.

Emilia sonchifolia (Linn.) DC. var. **scabra** (DC.) Hook. f.

Khasi and Jaintia Hills: Raliang, *Rolla* 2657; Mawmluh, *Deka* 2729; Pynursla, *Panigrahi* 2924; Nongstoin, *Panigrahi* 16549; Jowai, *Deka* 17105; *De* 18862; Shillong, *Deka* 13557; Sonakuram, *Kanjilal* 9211; Sohraraim, *Sharma* 20055; Lohit F.D.: Pasighat, *Deka* 16882. Common.

Erechtites valerianaefolia DC.

Siang F.D.: Geiling, *Murthy* 13089; Lohit F.D.: Badaru, *Rolla* 10331. Common.

Erigeron alpinus Linn. var. **khasianus** Hook. f.

Khasi and Jaintia Hills: Lumdirin, *Panigrahi* 16290; without locality, *Gustav Mann* 645; Mairang, *Kanjilal* 6633. Scarce.

E. annuus Pers.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 21899; *Deka* 21919; Mairang, *Panigrahi* 16276; Upper Shillong, *Saikia* 23342; Sohryngkham, *Saikia* 23413. Common.

E. bellidioides Benth.

Khasi and Jaintia Hills: Cherrapunji, *Rolla* 2677; without locality, *Gustav Mann* 197; Shillong Peak, *Deka* 22404.

E. canadensis Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 2863; *Sharma* 13580; Shillong Peak, *Rolla* 14035; Mawryngkneng, *Deka* (without field no.); Umsaw, *Sharma* 20920. Common.

E. linifolium Willd.

Khasi and Jaintia Hills: Umsaw, *Deka* 21147; Upper Shillong, *Deka* 18807; Shillong, *Kanjilal* 7368; *Rolla* 2669; Mairang, *Panigrahi* 16153; Lakhimpur: Digboi, *Panigrahi* 18940; Darrang: Potashali, *Panigrahi* 5556; Kameng F.D.: Kalaktang, *Panigrahi* 15109; Subansiri F.D.: 9th mile from Kimin, *Panigrahi* 19444; Tirap F.D.: Laju, *Panigrahi* 14733. Common.

E. kuruinskianus DC.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3234; *Deka* 3915; *Deka* 22161. Common.

Ethulia conyzoides Linn.

Sibsagar-Goalpara: Sarbhanga river bank, *Rolla* 7176; Tirap F.D.: Pangsupass, *Rolla* 20024; Rusa, *Panigrahi* 16940. Common.

Eupatorium ayapana Vent.

Khasi and Jaintia Hills: Umsaw, *Deka* 17140. Cultivated for its medicinal value.

E. trapezoideum Kunth

Khasi and Jaintia Hills: Shillong, *Deka* F 21640.

E. cannabinum DC.

Khasi and Jaintia Hills: Jorain, *Panigrahi* 4181; Nongkhlaw; *Panigrahi* 16233; Kynshi, *Panigrahi* 16329; Markasa, *Panigrahi* 16448; Shillong, *Panigrahi* 3195; Subansiri F.D.: 40th mile from Kimin, *Panigrahi* 19727.

E. foeniculaceum Willd.

Khasi and Jaintia Hills: Shillong, *Deka* 23376. Tirap F.D.: Jairampur, *Rolla* 19904; Wanu, *Panigrahi* 15062.

E. odoratum Linn.

Khasi and Jaintia Hills: Pynursla, *Panigrahi* 4690; Darrang: Chardwar, *Panigrahi* 5596; Siang F.D.: Kiak, *Rolla* 18054. Common.

E. reevesii Wall. ex DC.

Kameng F.D.: Rupa, *Rolla* 1342.

E. riparium Regel

Khasi and Jaintia Hills: Shillong, *Deka* 11116.

Galinsoga parviflora Cav.

Khasi and Jaintia Hills: Nongstoin, *Panigrahi* 16502; Shillong, *Panigrahi* 2877; Upper Shillong, *Deka* 21497; Khasi Hills, *Gustav Mann* 1135; Kameng F.D.: Kalaktang, *Panigrahi* 15572; Sissini (1350 m), *Panigrahi* 5957; Aka Hills, *Bor* 17391.

Gerbera macrophylla Benth.

Khasi and Jaintia Hills: Peak Forest, *Deka* 17229; Sohraraim, *Sharma* 17980; Sorynghan syom 22881; Laitlyngkhot, *De* 16857; Upper Shillong, *Panigrahi* 3762; Shillong, *Panigrahi* 3797. Mawrynkneng, *Panigrahi* 4010; Jowai, *Panigrahi* 5172; Kameng F.D.: Rupa, *Rolla* 1313; Rahung, *Rolla* 1495.

G. piloselloides Cass.

Khasi and Jaintia Hills: Nongkhlaw, *Panigrahi* 16244; Shillong, *Gustav Mann* 878; Mawryngkneng, *Deka s.n.*; Kameng F.D.: Thengri (2083 m), *Panigrahi* 6591; Rupa (1570 m), *Panigrahi* 6686; Rahung (2766 m), *Rolla* 7422; Bomdila (1981 m), *Rolla* 8060: Kalaktang, *Panigrahi* 15500; Aka Hills, *Bor* 1789.

Gnaphalium hypoleucum DC.

Khasi and Jaintia Hills: Upper Shillong, *Saikia* 23344; Shillong, *Deka* 18382; Kameng F.D.: *Gustav Mann* 497; Aka Hills, *Bor* 17400; Kameng F.D.: Bomdila (2750 m), *Panigrahi* 6931; Warang, *Panigrahi* 15698; Subansiri F.D.: Zorum (1606 m), *Panigrahi* 19750. Abundant.

G. indicum Linn.

Goalpara: Sarbhanga river bank, *Rolla* 7186; Darrang: Dharikati, *Panigrahi* 5652. Common.

G. luteo-album Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3232; Kameng F.D.: Bompu, *Panigrahi* 6226; Chakoo (2484 m), *Panigrahi* 6346; Kalaktang, *Panigrahi* 15838; Thengri, *Panigrahi* 6505; Jegaon, *Panigrahi* 6932; Baha Hill, *Panigrahi* 15351; Subansiri F.D.:

Litchi Pahad, *Panigrahi* 19625; Siang F.D.: Tuting (600 m), *Murthy* 13060; Tirap F.D.: Chenglang (600 m), *Murthy* 12923.

Gnaphalium luteo-album Linn. var. **multiceps** Hook. f.

Kameng F.D.: Thengri (2183 m), *Panigrahi* 6546; Tirap F.D.: Laju Hills (1880 m), *Panigrahi* 14708.

G. purpureum Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3252; Nowgong: Silghat, *Panigrahi* 5347; Tezpur: Tangla, *Nath* 13399; Kameng F.D.: Baha, *Panigrahi* 15124; Khelang Gate (333 m), *Panigrahi* 5905; Thengri, *Panigrahi* 6586; Rahung (1750 m), *Rolla* 7376; Siang F.D.: Kameng, *Murthy* 13021.

Grangea maderaspatana (Linn.) Poir.

Darrang: Chardwar, *Panigrahi* 5589; Goalpara: Sandy bank of Sarbhanga river, *Rolla* 7165; Nowgong: Silghat, *Panigrahi* 5406; Kameng F.D.: Aka Hills, *Bor* 17405.

Gynura angulosa DC.

Khasi and Jaintia Hills: Longkerdem, *Kanjilal* 6176; Umsaw, *Sharma* 18287; Dawki, *Panigrahi* 4613; Jowai, *Panigrahi* 4045; Cherrapunji, *Panigrahi* 4949; Lakhimpur: Upper Dihing R.F., *Panigrahi* 18731; Kokai, *Panigrahi* 11354; Kameng F.D.: Rupa, *Panigrahi* 16055; Bomdila, *Rolla* 7276 (200 m); Jegaon (2000 m), *Panigrahi* 6666; Siang F.D.: Koppu (732 m), *Rolla* 17422; Tirap F.D.: Tinchha (1777 m), *Panigrahi* 14646; Chenglang, *Panigrahi* 14434; Subansiri F.D.: Hapoli, *Rolla* 1707; Lohit F.D.: Badaru, *Rolla* 10266; Dreyi (1200 m), *Rolla* 10468; Heyuliang (458 m), *Rolla* 10746; Sonegodam (850 m), *Rolla* 10393.

G. crepidioides Benth.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 21402; Nongkhlaw, *Panigrahi* 16194; Kamrup: Motharguri, *Rolla* 14142; Sibsagar: Kaziranga, *Rolla* 9850; Darrang: Orang, *Panigrahi* 14240; Potashali, *Panigrahi* 5544; Goalpara: Bank of Sarbhanga river, *Rolla* 14140.

G. nepalensis DC.

Kameng F.D.: Rupa, *Panigrahi* 6736; Baha, *Panigrahi* 15389; Tirap F.D.: Rusa, *Panigrahi* 17013.

G. pseudo-china DC.

Darrang: Bank of Jaibhula river, *Nath* 13389; Kameng F.D.: Thengri (2183 m), *Panigrahi* 6585; Amatola, *Panigrahi* 15169; Lohit F.D.: Shoeliang (625 m), *Rolla* 10632; Tirap F.D.: Chenglang, *Rolla* 12921.

Hypochaeris radicata Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 21406; Upper Shillong, *Rolla* 2734. Common.

Inula cappa DC.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 21900; Nongkhlaw, *Panigrahi* 16202; Cherrapunji, *Panigrahi* 3708; Nongpoh, *Naik* 19251; Kameng F.D.: Jegaon, *Panigrahi* 15958; Rupa, *Rolla* 1339; Subansiri F.D.: 40th mile from Kimin, *Panigrahi* 19708; Siang F.D.: Kampong (350 m), *Murthy* 13040; Along, *Murthy* 13101; Lohit F.D.: Paya, *Rolla* 10673; Shoeliang, *Rolla* 10592. Abundant.

I. eupatorioides DC.

Khasi and Jaintia Hills: Jowai, *Panigrahi* 4938; Lohit F.D.: Barpu (733 m), *Rolla* 10807. Scarce.

I. kalapani Clarke

Khasi and Jaintia Hills, *Gustav Mann* 543; Kynshi, *Panigrahi* 16337. Scarce.

I. rubricaulis Clarke

Kameng F.D.: Thengri (218 m), *Panigrahi* 6589. Scarce.

Lactuca hastata DC.

Khasi and Jaintia Hills: Cherrapunji, *Panigrahi* 3720. Scarce.

L. polycephala DC.

Darrang: *Panigrahi* 5602; Nunai, *Nath* 13242. Scarce.

L. brevirostris Champ.

Kamrup: Motharguri, *Rolla* 9912; Khasi and Jaintia Hills: Khasi Hills, *Gustav Mann* 343.

L. graciliflora DC.

Kameng F.D.: Aka Hills, *Bor* F17414. Scarce.

L. sagittarioides Clarke

Kameng F.D.: Rupa, (1717 m), *Panigrahi* 6639; Bomdila (1829 m), *Rolla* 7273. Scarce.

L. gracilis DC.

Khasi and Jaintia Hills: Shillong, *Rolla* 11158; Raliong, *Rolla* 2652; Upper Shillong, *Rolla* 2745; Mairang, *Panigrahi* 16171; Nongstoin, *Panigrahi* 16610; Barapani, *Saikia* 23264; Shillong, *Dhar* 22263; Kameng F.D.: Aka Hills, *Bor* 18918.

Laggera alata (Don) Sch.-Bip.

Khasi and Jaintia Hills: Jowai, *Deka* 17516; *Gustav Mann* 45; Jorain, *Panigrahi* 4183; Kameng F.D.: Rupa, *Panigrahi* 6641; Aka Hills, *Bor* 17392.

L. pterodonta Benth.

Khasi and Jaintia Hills: Shing, *Deka* 22868; Barapani, *Panigrahi* 3891; Kameng F.D.: Sissini (1350 m), *Panigrahi* 15697; Tirap F.D.: Chenglang, *Rolla* 12942.

Mikania cordata (Burm.) B. L. Robinson

Khasi and Jaintia Hills: Shella, *Panigrahi* 4878; Kamrup: Motharguri, *Rolla* 9913; Darrang: Nunai, *Nath* 13267; Sibsagar: Jorhat, *Bor* 11021; Lakhimpur: Lekhapani, *Panigrahi* 18995; Fakiragram,

Srinivasan 21963; Kameng F.D.: Aka Hills, *Bor* 17412; Tirap F.D.: Rusa, *Panigrahi* 17058.

Montanoa bipinnatifida C. Koch.

Khasi and Jaintia Hills: Shillong, *Deka* 11112. Cultivated.

Myriactis assamensis Fisch.

Naga Hills: (without locality), *Bor* 19820. Scarce.

M. nepalensis Less.

Khasi and Jaintia Hills: Peak forest, *Deka* 18245; Cherrapunji, *Deka* 19397, 22971; Lylingkot, *Sharma* 9462; Shillong, *Panigrahi* 3316; *De* 17524; without locality, *Gustav Mann* 189; Naga Hills: Kohima, *Bor* 16158; Kameng F.D.: Aka Hills, *Bor* 18915; Rupa, *Rolla* 1286; Brukpalanchen, *Panigrahi* 15679A; Siang F.D.: Geling (822), *Rolla* 17497; Tirap F.D.: Rusa, *Panigrahi* 16949; Laju Hill (1750 m), *Panigrahi* 14681; Subansiri F.D.: Hapoli, *Rolla* 1706; Lohit F.D.: Heyuliang (458 m), *Rolla* 10741. Abundant.

M. wallichii DC.

Kameng F.D.: Aka Hills, *Bor* 17390; Sengepzong, *Rolla* 7719; Tirap F.D.: Pangsupass (1127 m), *Rolla* 20151.

* **Petasites albus** Gaertn.

Kameng F.D.: Stream side before Thengri Village, *Panigrahi* 6444.

Picris hieracioides Linn.

Khasi and Jaintia Hills: Upper Shillong, *Deka* 20628; Nongpoh, *Sharma* 16747; Laitlyngnot, *De* 16912; Shillong, *Sharma* 16804; Laitkor, *Rolla* 14059; Kameng F.D.: Nyukmandong (2407.82 m), *Rolla* 7485; Shergaon, *Panigrahi* 15758.

Prenanthes hookeri Clarke ex Hook. f.

Kameng F.D.: Bomdila, *Rolla* 1395; Subansiri F.D.: Hapoli, *Panigrahi* 19824; Khasi and Jaintia Hills: Myn Krem Forest, *Deka* 17231; Jowai, *Sharma* 8665; Lylingnot, *Sharma* 9484; Mackerdim, *De* 16863; Rublai, *Kanjilal* 6017.

P. khasiana Clarke

Khasi and Jaintia Hills: Sohrarim, *Sharma* F20050; Lylingkot, *Sharma* 9487; Kameng F.D.: Bompula Camp, *Deka* F23152.

P. scandens Hook. f. & Thom.

Lohit F.D.: Dreyi (1200), *Rolla* 10428; Paya (400 m), *Rolla* 10872; Sonegodam, *Rolla* 10394; Siang F.D.: Minguing (1266 m), *Rolla* 17728.

Rhynchospermum verticillatum Reinw.

Khasi and Jaintia Hills: Nongramai forest, *Kanjilal* 6034; Subansiri F.D.: Ziro, *Rolla* 1709, 40th mile from Kimin, *Panigrahi* 19756.

* Deb (1967) has described this specimen (*Panigrahi* 6444) as a new species, viz. *Petasites kamengicus* Deb, but our studies show that the plant differs in no way from *P. albus* Gaertn.

Saussurea affinis Spreng.

Siang F.D.: Kappu (800 m), *Murthy* 13077; Kameng F.D.: Aka Hills, *Bor* 17403.

S. deltoidea Clarke

Khasi and Jaintia Hills: Peak forest, *De* 18808; Markasa, *Kanjilal* 5993; Jowai, *Deka* 17237; Upper Shillong, *Panigrahi* 3373; Kameng F.D.: Brukpalanchen, *Panigrahi* 15651; Aka Hills, *Bor* 17415.

S. deltoidea Clarke var. **nivea** Hook. f.

Kameng F.D.: Dirangzong, *Rolla* 7462.

Senecio alatus Wall. ex DC.

Kameng F.D.: Perila, *Panigrahi* 6919; Bompula Camp (2424 m), *Deka* 23220.

S. araneosus DC.

Kameng F.D.: Bomdila (2400 m), *Panigrahi* 6919; Lohit F.D.: Dreyi, *Rolla* 10382.

S. buimalia Buch.-Ham.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 4982.

S. chrysanthemoides DC. var. **chrysanthemoides**

Khasi and Jaintia Hills: Nongkhlaw, *Panigrahi* 16198.

S. densiflorus Wall.

Khasi and Jaintia Hills: Jowai, *Panigrahi* 4068; Pynursla, *Panigrahi* 4536; Cherrapunji, *Panigrahi* 4792; Kameng F.D.: Thengri Village (2083 m), *Panigrahi* 6441.

S. diversifolius Wall. ex DC.

Khasi and Jaintia Hills: Jowai, *Deka* 17238; Jowai, *Deka* 17101; Jorain, *Deka* 5188; Lower Assam (without locality), *Gustav Mann* 23; Kameng F.D.: (without locality), *Ramumy* 16623A.

S. graciliflorus DC.

Subansiri F.D.: Hapoli, *Panigrahi* 19854.

S. griffithii Hook f. & Thom.

Khasi and Jaintia Hills: Jorain, *Panigrahi* 4185; Pynursla, *Panigrahi* 4717.

S. linifolius Clarke

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3396; Cherrapunji, *Panigrahi* 4815; Markasa, *Panigrahi* 16408.

S. macranthus Clarke

Khasi and Jaintia Hills: Kynshi, *Panigrahi* 16341.

S. nudicaulis Buch.-Ham.

Kameng F.D.: Aka Hills, *Bor* F 17398.

S. saxatilis Wall. ex DC.

Khasi and Jaintia Hills: Mawphlang, *Kanjilal* 5844; Shillong, *Deka* 22527; Shillong, *Panigrahi* 19106; Cherrapunji, *Panigrahi* 3705; Jowai, *Panigrahi* 4027; Subansiri F.D.: 40th mile from Kimin, *Panigrahi* 19715.

S. scandens D. Don

Khasi and Jaintia Hills: Shillong, *Panigrahi*

3818; Pynursla, *Panigrahi* 4617; Kameng F.D.: Baha, *Panigrahi* 15384; Bomdila, *Rolla* 1374; Tirap F.D.: Khela, *Murthy* 12988; Lohit F.D.: Heyuliang (532.9 m), *Rolla* 10813; Sonegodam (850 m), *Rolla* 10380.

Senecio tetranthus DC.

Kameng F.D.: Bomdila, *Rolla* 1372; Bompula Camp (2424 m), *Deka* 23219.

S. triligulatus Buch.-Ham.

Siang F.D.: Koppu, *Rolla* 17446.

S. wattii Smith.

Kameng F.D.: Rupa (1700 m), *Panigrahi* 6821.

Siegesbeckia orientalis Linn.

Sibsagar: Kaziranga, *Rolla* 9855; Darrang: Nunai, *Nath* 13356; Kameng F.D.: Rupa, *Rolla* 1310; Subansiri F.D.: Hong village, *Panigrahi* 19780; Lohit F.D.: Sonegodam, *Rolla* 10347; Dreyi, *Rolla* 10365.

Sonchus arvensis Linn.

Khasi and Jaintia Hills: Shillong, *Deka* 18358; Kameng F.D.: Nyukmadong (2407 m), *Rolla* 7496; Kalaktang, *Panigrahi* 15532; Sissini (1350 m), *Panigrahi* 6095.

S. asper (Linn.) Hill

Kameng F.D.: Kalaktang, *Panigrahi* 15873; Jegaon (1829 m), *Panigrahi* 6668; Aka Hills, *Bor* 17397; Darrang: Batasipur, *Srinivasan* 22401; Khasi and Jaintia Hills: Shillong, *Sharma* 17135.

S. oleraceus Linn.

Khasi and Jaintia Hills: Shillong, *Panigrahi* 3250; Sibsagar: Jorhat, *Dutta* 16489.

Sphaeranthus indicus Linn.

Goalpara: Sarbhanga sandy bank, *Rolla* 7169; Kamrup: Santipur, *Kanjilal* 5423; Dalchinnam Pather, *De* 18844; Khasi and Jaintia Hills: Nongpoh, *Deka s.n.*; Umsaw, *Sharma* 16289; Dawki, *Deka* 16395.

Spilanthes acmella Linn. var. **acmella**

Khasi and Jaintia Hills: Shillong, *Panigrahi* 2886; Mawmluh, *Deka* 2719; Pynursla, *Panigrahi* 2947; Markasa, *Panigrahi* 16376; Cherrapunji, *Deka* 18103; Jowai, *Deka* 5030; Tirap F.D.: Mamchek, *Rolla* 20175.

S. acmella Linn. var. **oleraceus** Hook. f.

Khasi and Jaintia Hills: Shillong, *Deka* 21801; Siang F.D.: Tuting, *Murthy* 13026.

Synedrella nodiflora Gaertn.

Khasi and Jaintia Hills: Barapani, *Panigrahi* 3889; Umsaw, *Deka* 23385; Nongpoh, *Sharma* 20000; Mahadewa, *Deka* 18464; Darrang: Singri IB., *Panigrahi* 14345; Potashali, *Panigrahi* 5566.

Tagetes erecta Linn.

Khasi and Jaintia Hills: Shillong, *Deka* 17633. Garden plant.

T. patula Clarke

Khasi and Jaintia Hills: Shillong, *Dhar* 20014; Kameng F.D.: Kalaktang, *Panigrahi* 15540; Tirap F.D.: Waka, *Panigrahi* 14900.

Taraxacum officinale Weber

Kameng F.D.: Sela, *Rolla* 1585; Tawang (3333 m), *Rolla* 7890.

Thespis divaricata DC.

Kameng F.D.: Aka Hills, *Bor* F17410.

Tithonia tagetiflora Desf.

Khasi and Jaintia Hills: Jowai, *Panigrahi* 5203; Cherrapunji, *Panigrahi* 4701; Burnihat, *Panigrahi* 4317; Umsaw, *Sharma* 17193; G. S. Road, *Deka* 21569.

Tridax procumbens Linn.

Lakhimpur: Digboi, *Deka* F 1770; Kameng F.D.: Aka Hills, *Bor* F 17406.

Vernonia arborea Buch.-Ham.

Khasi and Jaintia Hills: Cherrapunji, *Panigrahi* 3656.

V. attenuata DC.

Kameng F.D.: Aka Hills, *Bor* F 18912.

V. cinerea (Linn.) Less.

Khasi and Jaintia Hills: Raliang, *Rolla* 2627; Burnihat, *Panigrahi* 4309; Nongpoh, *Deka* 18154; Mikir Hills: Deygrum, *Panigrahi* 9396; Darrang: Burigong, *Panigrahi* 11216; Kameng F.D.: Bairabkund, *Panigrahi* 15107, Subansiri F.D.: Zorum Basti, *Panigrahi* 19676; Siang F.D.: Tuting, *Murthy* 13066; Lohit. F.D.: Heyuliang (491 m), *Rolla* 10718.

V. saligna DC.

Khasi and Jaintia Hills: Mawryngkneng, *Saikia* 23424; Chera Road, *Sharma* 18211; Shillong, *Sharma* 9832; Nongpoh, *Kanjilal* 19775; Cherra, *Deka* 19226; Lakhimpur: (without locality), *Purkayastha* 13335; Garo Hills: (without locality), *Gustav Mann s.n.*; Pynursla *Panigrahi* 4703; Umtru, *Panigrahi* 4377: Gauhati: Kamekhya Mandis Hill, *Panigrahi* 5375; Darrang: Tezpur, *Panigrahi* 5290; Kameng F.D.: Saleri, *Rolla* 1428; Aka Hills, *Bor* 17407; Aka Hills, *Deka* 23146; Subansiri F.D.: Zorum, *Panigrahi* 19735; Lohit F.D.: Paya (400 m), *Rolla* 10861; Shoeliang (800 m), *Rolla* 10611.

V. scandens DC.

Darrang: Potashali, *Panigrahi* 5541; Siang F.D.: Geling (600 m), *Murthy* 13088; Tuting (702 m), *Rolla* 17341; Takepokong (1739 m), Rolla 17815; Lohit F.D.: Heyuliang (730 m), *Rolla* 10820.

V. talaumifolia Hook. f. & Thom.

Lohit F.D.: Barpu (633 m), *Rolla* 10827.

V. volkameriaefolia DC.

Khasi and Jaintia Hills: Shillong, *Rolla* 11122;

Barapani, *Deka* 2898; Garampani, *Deka* 5149; Mawmluh, *Deka* 18105; Pynursla, *Panigrahi* 4554; Subansiri F.D.: Yacholi, *Panigrahi* 19688; Tirap F.D.: Kheti, *Panigrahi* 14541; Kameng F.D.: Rahung (1800 m), *Rolla* 7506.

Wedelia calendulacea Less.

Khasi and Jaintia Hills: Umsaw, *Deka* 17139.

W. wallichii Less.

Khasi and Jaintia Hills: Peak Forest, *Deka* 10151; Nongpoh, *Deka* 13507; Barapani, *Sharma* 19560; *Gustav Mann* 238; Jowai, *Panigrahi* 4050; Nongstoin, *Panigrahi* 16548; Nongpoh, *Rolla* 11055; Kamrup: Garbhanga R.F., *Panigrahi* 9634; Motharguri, *Rolla* 9907; Goalpara: Chirang R.F., *Rolla* 7175A; Kameng F.D.: Aka Hills, *Bor* 17411.

Xanthium strumarium Linn.

Darrang: Tezpur, *Panigrahi* 5286; Nunai, *Nath* 13352; Sibsagar; Baguri, *Panigrahi* 9337; Tirap F.D.: Jairampur, *Rolla* 19986.

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